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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,666	08/07/2001	Hiroaki Abe	SON-2183	1397

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EXAMINER
FLORES RUIZ, DELMA R

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 09/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/922,666	ABE, HIROAKI	
	Examiner	Art Unit	
	Delma R. Flores Ruiz	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) *12-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul Ip

PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 – 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1 and 10 are indefinite and unclear because it has been held that the functional "whereby" statement does not define any structure and accordingly can not serve to distinguish. In re Mason, 114 USPQ 127, 44 CCPA 937 (1957).

The term "smaller" in claim 1, and 10 are a relative term which renders the claim indefinite. The term "smaller" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Okamoto et al (5,787,105).

Regarding claims 1 and 7, Okamoto discloses a laser diode comprising: a first clad layer (see Fig. 2D, Character 24) of a first conductivity type formed on a substrate (see Fig. 2D, Character 21); an active layer (see Fig. 2D, Character 26) formed at an upper layer of said first clad layer; a second clad layer (see Fig. 2D, Character 25) of a second conductivity type formed at an upper layer of said active layer; a third clad layer (see Fig. 2D, Character 29) of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region (Column 7, Lines 20 – 36); a contact layer (see Fig. 2D, Character 95 or see Fig. 11, Character 100) formed at an upper layer of said third clad layer; and an electrode (see Fig. 2D, Character 501) formed so as to connected said contact layer; whereby when a first current is injected from said electrode via said contact layer by applying a predetermined voltage to said

electrode and laser light in emitted from a laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser light oscillation region are controlled for self pulsation and a degree of self pulsation can be adjusted by a thickness of said third clad layer and width of said current injection stripe region (see Figs. 2 A – 13, Column 5, Lines 47 – 55, Column 6, Lines 13 – 27, Column 7, Lines 20 – 36, Column 8, Lines 56 - 67).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 6, 8 - 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nemoto (6,358,754) in view of Uchida (6,009,112).

Regarding claims 2 and 6 Nemoto discloses the claimed invention except for saturable absorption region are formed at said ends of the laser light oscillation region for self pulsation and etching stop layer between said second clad layer an third clad layer. It would have been obvious at the time of applicant's invention, to combine Uchida of teaching a saturable absorption region are formed at said ends of the laser light oscillation region for self pulsation and etching stop layer between said second clad layer an third clad layer with laser diode because the etching stop layer acts not only as a layer for terminating the etching effect but also as a passivation layer for preventing oxidation of the cladding.

Regarding claims 8 – 9 Nemoto discloses the claimed invention except for thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm. It would have been obvious at the time of applicant's invention, to combine Uchida of teaching a thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm with laser diode because it would have been obvious to one of ordinary skill in the art at the time the invention was made to thickness of said third clad layer is in rage is 0.1μm to 0.7μm and a width of said current injection stripe region is in a range of 1.5μm to 5μm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Claims 3 – 5 and 10 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okamoto in view of Nemoto (6,358,754).

Regarding claims 3 – 5, Okamoto dislcoses a second clad layer comprises a AlGaInP based material and a material of said electrode at a portion contacting said second clad layer comprises titanium and a electrode comprises stacked layer of titanium, platinum and gold and formed so as to contact said second clad layer and contact layer from the titanium side. It would have been obvious at the time of applicant's invention, to combine Nemoto of teaching a second clad layer comprises a AlGaInP based material and a material of said electrode at a portion contacting said second clad layer comprises titanium and a electrode comprises stacked layer of titanium, platinum and gold and formed so as to contact said second clad layer and contact layer from the titanium side with laser diode because it would have been obvious to one having ordinary skill in the art at the time the invention was made to second clad layer comprises a AlGaInP based material and a material of said electrode at a portion contacting said second clad layer comprises titanium and a electrode comprises stacked layer of titanium, platinum and gold and formed so as to contact said second clad layer and contact layer from the titanium side, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 10 and 11 Okamoto discloses a semiconductor light emitting device comprising a first clad layer (see Fig. 2D, Character 24) of a first conductivity type formed on a substrate (see Fig. 2D, Character 21); an active layer (see Fig. 2D, Character 26) formed at an upper layer of said first clad layer; a second clad layer (see Fig. 2D, Character 25) of a second conductivity type formed at an upper layer of said active layer; a third clad layer (see Fig. 2D, Character 29) of the second conductivity type formed at an upper layer of said second clad layer in a current injection stripe region (Column 7, Lines 20 – 36); a contact layer (see Fig. 2D, Character 95 or see Fig. 11, Character 100) formed at an upper layer of said third clad layer; and an electrode (see Fig. 2D, Character 501) formed so as to connected said contact layer; whereby when a first current is injected from said electrode via said contact layer by applying a predetermined voltage to said electrode and laser light in emitted from a laser light oscillation region near said active layer, a second current which is smaller than said first current is injected in regions other than said current injection stripe region from said electrode via said second clad layer and currents at ends of said laser light oscillation region are controlled for self pulsation and a degree of self pulsation can be adjusted by a thickness of said third clad layer and width of said current injection stripe region (see Figs. 2 A – 13, Column 5, Lines 47 – 55, Column 6, Lines 13 – 27, Column 7, Lines 20 – 36, Column 8, Lines 56 - 67). It would have been obvious at the time of applicant's invention, to combine Nemoto of teaching a plurality diode lasers with laser diode because it would have been obvious to one having ordinary skill in the art at the time

the invention was made to plurality diode lasers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Response to Arguments

Applicant's arguments with respect to claims 1 - 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

Delma R. Flores Ruiz
Examiner
Art Unit 2828

Paul Ip
Supervisor Patent Examiner
Art Unit 2828

DRFR/PI
August 25, 2003